



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,877	11/05/2001	Hakan Ozdemir	99-S-190 (1678-22-1)	8286

30431 7590 03/22/2004
STMICROELECTRONICS, INC.
MAIL STATION 2346
1310 ELECTRONICS DRIVE
CARROLLTON, TX 75006

EXAMINER

RODRIGUEZ, GLENDA P

ART UNIT PAPER NUMBER

2651

DATE MAILED: 03/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/993,877

Applicant(s)

OZDEMIR, HAKAN

Examiner

Glenda P. Rodriguez

Art Unit

2651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/01/2003</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION***Double Patenting***

Claim 20 of this application conflict with claim 29, respectively of Application No. 09/993869. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

Claims 20 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 29, respectively of copending Application No. 09/993869. Although the conflicting claims are not identical, they are not patentably distinct from each other because it discloses the detection of servo wedges during or after a spin-up operation (which is an operation when the disk is attaining or after the disk attains an operating speed.).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2651

Claim 1, 2, 8-13 and 29-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Tuttle et al. (US Patent No. 5, 796, 535).

Regarding Claim 1, Tuttle et al. teach a storage disk, comprising:

A disk sector having a beginning and operable to store data (Fig. 2B and Col. 4, Lines 23-41);

And a servo wedge located at the beginning of the sector and operable to identify the sector in conjunction with an initial positioning of a read-write head and a read of the data from or write of the data to the disk sector (Col. 7, Lines 24-65. Tuttle et al. teaches the use of a servo address mark in order to quickly detect the starting position of the head with respect to the disc).

Regarding Claim 2, Tuttle et al. teach all the limitations of Claim 1. Tuttle et al. further teach wherein the sector includes a track that is operable to store the data (Fig. 2B and Col. 4, Lines 23-41); And the servo wedge is operable to identify the track during an initial positioning of a read-write head and during a subsequent read of the data from or write of the data to the track (Col. 7, Lines 24-65. Tuttle et al. teaches the use of a servo address mark in order to quickly detect the starting position of the head with respect to the disc).

Regarding Claim 8, Tuttle et al. teach a storage disk, comprising:

A disk sectors operable to store data (Fig. 2B and Col. 4, Lines 23-41);

Servo wedges located in the disk sectors and having respective location identifiers, position bursts, and other portions, the other portions of each

Art Unit: 2651

servo wedge substantially the same as the other portions of all the other servo wedges (Col. 4, Lines 23-50);

And no servo wedge having other portions that are significantly different than the respective other portions of the other servo wedges (Col. 4, Lines 23-50. Tuttle et al. further teach that this is the typical manner in which servo wedges are done throughout the disk.).

Regarding Claim 9, Tuttle et al. teach all the limitations of Claim 8. Tuttle et al. further teach wherein the other portions of each servo wedge include a preamble (Col. 4, Lines 23-41).

Regarding Claim 10, Tuttle et al. teach all the limitations of Claim 8. Tuttle et al. further teach wherein the others portions of each servo wedge include a servo synchronization mark (Col. 4, Lines 23-41).

Regarding Claim 11, Tuttle et al. teach all the limitations of Claim 8. Tuttle et al. further teach wherein the others portions of each servo wedge include a servo address mark (Col. 4, Lines 23-41).

Regarding Claim 12, Tuttle et al. teach all the limitations of Claim 8. Tuttle et al. further teach wherein the location identifier of each servo wedge is different from the location identifier of another servo wedge (Col. 4, Lines 23-41).

Regarding Claim 13, Tuttle et al. teach all the limitations of Claim 8. Tuttle et al. further teach wherein the position bursts of each servo wedge are different from the position bursts of another servo wedge (Col. 4, Lines 23-50).

Regarding Claim 29, Tuttle et al. teach a method, comprising:

Art Unit: 2651

Writing a first servo wedge onto a surface of a data-storage disk to define a first disk sector that is operable to store file data, the first servo wedge including first servo data that is operable to identify the first disk sector during an initial positioning of a head over the disk and during a read of file data from or a write of file data to the first disk sector (Fig. 2B and Col. 4, Lines 23-50. Tuttle et al. teach that the plurality of servo wedges are written with those specifications.);

And writing a second servo wedge onto the surface of the data-storage disk to define a second disk sector that is operable to store file data, the second servo wedge including second servo data that is operable to identify the second disk sector during a read of file data from or a write of file data to the second disk sector (Fig. 2B and Col. 4, Lines 23-50. Tuttle et al. teach that the plurality of servo wedges are written with those specifications.).

Regarding Claim 30, Tuttle et al. teach all the limitations of Claim 29. Tuttle et al. further teach wherein the second servo data is operable to identify the second disk sector during the initial positioning of the head over the disk (Col. 4, Lines 23-50. Tuttle et al. teach that a plurality of sectors have an identification area in the servo data.).

Regarding Claim 31, Tuttle et al. teach all the limitations of Claim 29. Tuttle et al. further teach wherein the second servo data is unable to identify the second disk sector during the initial positioning of the head over the disk (Col. 4, Lines 23-50).

Art Unit: 2651

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sacks et al. (US Patent No. 6, 181, 505) in view of Tuttle et al. (US Patent No. 6, 108, 151).

Regarding Claims 14 and 20, Tuttle et al. teach a disk drive system, comprising:

A data-storage disk having a surface, data sectors at respective locations of the surface, and servo wedges that each include respective servo data that identifies the location of a respective data sector (Pat. No. 6, 108, 151; Figs. 2A and 2B and Col. 4, Lines 30-56);

A motor coupled to and operable to rotate the disk (It is known that the disk is rotated by a motor or spindle);

A read head operable to generate a read signal that represents the servo data and having a position with respect to the surface of the data-storage disk (Col. 5, Lines 49-61);

A read-head positioning circuit operable to move the read head over the surface of the disk (Col. 4, Lines 13-16);

Art Unit: 2651

And a servo circuit coupled to the read head and to the read-head positioning system (Col. 14, Lines 13-28),

And a processor wherein it detects of the preamble of the servo wedges without first detecting a spin up wedge (Pat. No. 6, 108, 151; Col. 4, Lines 29-56)

Tuttle et al. fails to teach a servo circuit including a servo channel with a processor coupled to the servo channel. However, this feature is well known in the art as disclosed by Sacks et al., wherein it teaches A servo channel operable to recover servo data from servo wedges that identify respective data sectors on a data-storage disk (Pat. No. 6, 181, 505; Col. 6, Lines 3-26) and a processor coupled to and operable to control the servo channel (Pat. No. 6, 181, 505; Col. 6, Lines 3-26). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Tuttle et al.'s invention in order control the positioning of the head to the disk.

Claims 15-19 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tuttle et al. and Sacks et al. as applied to claims 14 and 20, respectively above, and further in view of Leis et al. (US Patent No. 5, 036, 408).

Regarding Claims 15 and 21, Tuttle et al. and Sacks et al. teach all the limitations of Claims 14 and 20, respectively. Tuttle et al. and Sacks et al. fail to teach wherein the servo channel is operable to recover the servo data from the detected servo wedge; and the servo circuit is operable to, determine an initial position of the read head from the recovered servo data, and provide the initial position to the read-head positioning circuit. However, this feature is well known in the art as disclosed by Leis et al., wherein it

Art Unit: 2651

teaches the servo channel is operable to recover the servo data from the detected servo wedge (Pat. No. 5, 036, 408; Col. 7, Lines 1-50 and Abstract); and the servo circuit is operable to, determine an initial position of the read head from the recovered servo data, and provide the initial position to the read-head positioning circuit (Pat. No. 5, 036, 408; Col. 7, Lines 1-50 and Abstract). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Tuttle et al. and Sacks et al.'s invention in order to control the position and synchronize the read/write head (Pat. No. 5, 036, 408; See Abstract).

Regarding Claims 16 and 22, Tuttle et al. and Sacks et al. teach all the limitations of Claims 14 and 20, respectively. Tuttle et al. and Sacks et al. fail to teach wherein the servo channel is operable to recover the servo data from the detected servo wedge and to provide the location of the respective data sector to the read-head positioning circuit. However, this feature is well known in the art as disclosed by Leis et al., wherein it teaches wherein the servo channel is operable to recover the servo data from the detected servo wedge and to provide the location of the respective data sector to the read-head positioning circuit (Pat. No. 5, 036, 408; Col. 7, Lines 1-50 and Abstract. Leis et al. teach a servo control system used for positioning the head. It is obvious to a person of ordinary skill in the art that servo channels are used for that same purpose.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Tuttle et al. and Sacks et al.'s invention in order to control the position and synchronize the read/write head (Pat. No. 5, 036, 408; See Abstract).

Regarding Claims 17 and 23, Tuttle et al. and Sacks et al. teach all the limitations of Claims 14 and 20, respectively. Tuttle et al. and Sacks et al. fail to teach the servo channel is operable to recover the servo data from the detected servo wedge and to provide the location of the respective data sector to the read-head positioning circuit; and the read-head positioning circuit is operable to determine an initial position of the read head from the location of the respective data sector. However, this feature is well known in the art as disclosed by Leis et al., wherein it teaches the servo channel is operable to recover the servo data from the detected servo wedge and to provide the location of the respective data sector to the read-head positioning circuit (Pat. No. 5, 036, 408; Col. 7, Lines 1-50 and Abstract); and the read-head positioning circuit is operable to determine an initial position of the read head from the location of the respective data sector (Pat. No. 5, 036, 408; Col. 7, Lines 1-50 and Abstract). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Tuttle et al. and Sacks et al.'s invention in order to control the position and synchronize the read/write head (Pat. No. 5, 036, 408; See Abstract).

Regarding Claims 18 and 24, Tuttle et al. and Sacks et al. teach all the limitations of Claims 14 and 20, respectively. Tuttle et al. and Sacks et al. fail to teach wherein the read-head position circuit and the servo circuit are unable to determine the position of the read head before the processor detects the one servo wedge. However, this feature is well known in the art as disclosed by Leis et al., wherein it teaches the read-head position circuit and the servo circuit are unable to determine the position of the read head before the processor detects the one servo wedge (Pat. No. 5, 036, 408; See

Art Unit: 2651

Abstract). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Tuttle et al. and Sacks et al.'s invention in order to control the position and synchronize the read/write head (Pat. No. 5, 036, 408; See Abstract).

Regarding Claim 19, Tuttle et al. and Sacks et al. teach all the limitations of Claim 14. Tuttle et al. and Sacks et al. fail to teach wherein the read head comprises a read-write head. However, this feature is well known in the art as disclosed by Leis et al., wherein it teaches wherein the read head comprises a read-write head (Pat. No. 5, 036, 408; See Abstract). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Tuttle et al. and Sacks et al.'s invention in order to control the position and synchronize the read/write head (Pat. No. 5, 036, 408; See Abstract).

Claims 3-6, 25, 26 and 27 rejected under 35 U.S.C. 103(a) as being unpatentable over Tuttle et al. (US Patent No. 6, 108, 151) in view of Ottesen et al. (US Patent No. 6, 560, 054).

Regarding Claim 3, Tuttle et al. teach a storage disk, comprising:

Data sectors (Pat. No. 6, 108, 151; Fig. 2A);

Servo wedges each identifying a respective data sector (Pat. No. 6, 108, 151; Col. 4, Lines 29-47);

Tuttle et al. fail to teach wherein the servo sector has no spin-up wedges. However, this feature is well known in the art as disclosed by Ottesen et al., wherein it teaches a disk drive in which the positioning is determined by the motor, and according to the

Art Unit: 2651

position of the motor, it matches with the position of the servo sector (therefore no spin-up wedge to determine the position of the sector is needed) (Pat. 6, 560, 540; Col. 2, Line 64-Col. 3, Line 31). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Tuttle et al.'s invention in order to not have spin-up wedges in order to improve the detection of the position of the rotary position of the disks (Pat. No. 6, 560, 540; Col. 2, Lines 45-50).

Regarding Claim 5, Tuttle et al. teach a storage disk, comprising:

Disk sectors operable to store data (Pat. No. 6, 108, 151; Col. 4, Lines 29-47);

Servo wedges located in the disk sectors and each having a pre-synchronization-mark section with substantially the same bit pattern and length as the preambles of the other servo wedges (Pat. No. 6, 108, 151; Col. 4, Lines 29-47);

Tuttle et al. fail to teach wherein no servo wedge having a pre-synchronization-mark section with a significantly different bit pattern or a significantly different length as compared to the preambles of the other servo wedges. However, this feature is well known in the art as disclosed by Ottesen et al., wherein it teaches a disk drive in which the positioning is determined by the motor, and according to the initial position of the motor and from that point it matches with the position of the servo sector without the need of a pre-synchronization mark (therefore no spin-up wedge to determine the position of the sector is needed) (Pat. 6, 560, 540; Col. 2, Line 64-Col. 3, Line 31). It would have been obvious to a person of ordinary skill in the art, at the time the invention

Art Unit: 2651

was made, to modify Tuttle et al.'s invention in order to not have spin-up wedges in order to improve the detection of the position of the rotary position of the disks (Pat. No. 6, 560, 540; Col. 2, Lines 45-50).

Regarding Claims 4 ad 6, Tuttle et al. and Ottesen et al. teach all the limitations of Claims 3 and 5, respectively. Tuttle et al. further teach wherein the data sectors comprise tracks (Pat. No. 6, 108, 151; Col. 4, Lines 29-47); and each servo wedge identifies and is located in a respective track (Pat. No. 6, 108, 151; Col. 4, Lines 29-47).

Method claim 25 is drawn to the method of using the corresponding apparatus claimed in claim 3. Therefore method claim 25 corresponds to apparatus claim 3 and is rejected for the same reasons of obviousness as used above.

Regarding Claim 26, Tuttle et al. and Ottesen et al. teach all the limitations of Claim 25. Tuttle et al. further teach wherein the wherein writing the servo wedge comprises writing the servo wedge at the beginning of the disk sector (Pat. No. 6, 108, 151; Col. 4, Lines 29-47).

Regarding Claim 27, Tuttle et al. and Ottesen et al. teach all the limitations of Claim 25. Tuttle et al. further teach wherein writing the servo wedges comprises writing the servo wedge in a track of the disk sector, the servo data operable to identify the track during an initial positioning of the head and during a read of file data from or write of file data to the track (Pat. No. 6, 108, 151; Col. 4, Lines 29-47).

Claim 7 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tuttle et al. and Ottesen et al. as applied to claims 5 and 25, respectively above, and

Art Unit: 2651

further in view of Ehrlich et al. (US Patent No. 6, 519, 107). Tuttle et al. and Ottesen et al. teach all the limitations of Claim 5 and 25, respectively. Tuttle et al. and Ottesen et al. fail to teach wherein the one servo wedge lacks an erase field. However, this feature is well known in the art as disclosed by Ehrlich, wherein it teaches servo wedge which lacks an erase field (Pat. No. 6, 519, 107; Col. 14, Lines 20-33). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Tuttle et al. and Ottesen et al.'s invention in order to eliminate the erase field in order to provide positioning for the actuator head (Pat. No. 6, 519, 107; Col. 14, Lines 33-50).


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenda P. Rodriguez whose telephone number is (703)305-8411. The examiner can normally be reached on Monday thru Thursday: 7:00-5:00; alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (703)308-4825. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2651

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



gpr
March 11, 2004.



DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600